

BELANGRIJK:
houd deze schema's bij het orgel!!
IMPORTANT:
keep the schematic diagrams with the organ!!
WICHTIG:
Schaltpläne bei Orgel aufbewahren!!

SERVICE INFORMATION

0275

solina

STRING - ENSEMBLE

INHOUD - CONTENTS - INHALT

Gate circuit	021.0001
Bass circuit	003.3015
Divider circuit A	005.0077
Divider circuit B	005.0078
Register circuit	003.3016
Master oscillator circuit	005.0071
Schematic diagram	
Wiring diagram	
Signal flow diagram	
Control circuit	012.0025
Modulator circuit B	012.0022
Divider circuit C	005.0082
Power supply	008.0066

Part No.* Sheet No.

*Printed circuit
Part number!

015.0212
015.0213
015.0214

TECHNISCHE GEGEVENS

Netfrequentie
Netspanning*

Ingang (input):
Expressionpedal

Output:
Low output I
High output II

Zekeringen:
net: 220 V*
18,5 V 2x
traag

TECHNICAL DATA

Mains frequency
Mains voltage*

Input connection:
Expressionpedal

Output:
Low output I
High output II

Fuses:
mains: 220 V*
18,5 V 2x
slow action

TECHNISCHE DATEN

Netzfrequenz
Netzspannung*
50/60 Hz
220 V (115-240-250*)

Eingang (input):
Schwellpedal

Ausgangsabnahme:
Low output I $\pm 1,5$ V tt - imp: 3 kOhm
High output II ± 5 V tt - imp: 5 kOhm

Sicherungen:
Netz: 220 V*
18,5 V 2x
träge
thermal release in primary
winding (micro STB 4239
disconnect temp. 115 °C)
3,15 Amp.

* 115 - 240 - 250 V.

*Voor 115, 240 en 250 Volt netspanning; als volgt te werk gaan:
-verwijder kap van de transformator
-de draad op de 220 V aansluiting omzetten naar de gewenste netspanning

*For 115, 240 and 250 Volt operation:
-remove cover of transformer
-relocate mains voltage to appropriate voltage.

*Für 115, 240 und 250 V Netzspannung wie folgt handeln:
-Die Kappe des Transformators entfernen
-Den Draht des 220 V Anschlusses in die gewünschte Netzspannung umsetzen.

Service dokumentatie:

Service information:

Kundendienst dokumentation:

(aanvragen bij servicedienst te Bodegraven)
(inquire by your importer or MCH Holland)
(fragen Sie bei Ihrem Importeur oder MCH)

Service onderdelenlijst zie:

Service parts list see:

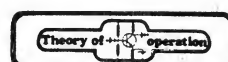
Service-Ersatzteilliste siehe:



Schema beschrijvingen zie:

For theory of Operation see:

Schaltplanbeschreibungen siehe:



Storings- en lokalisatielijst zie

Trouble shooting guide see:

Fehlersucheliste siehe:



ATTENTIE:

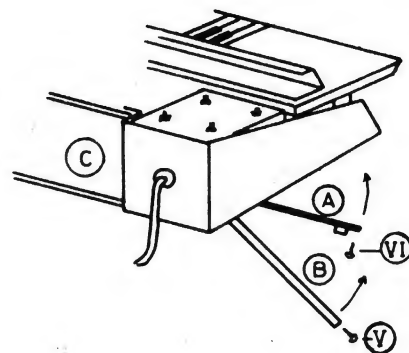
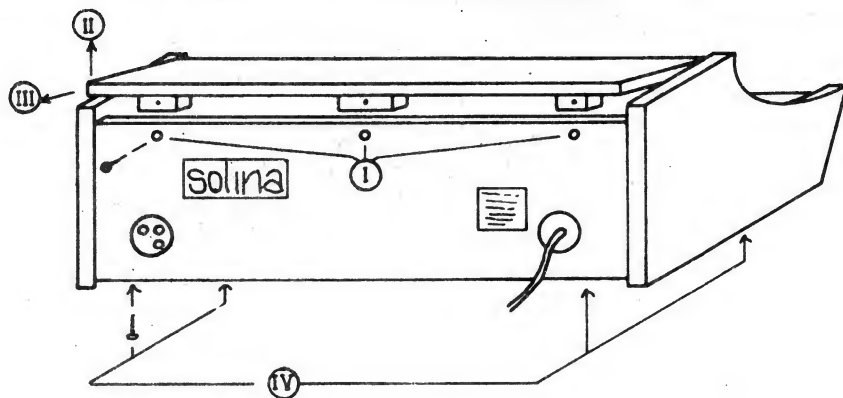
ATTENTION:

ACHTUNG:

THEORY OF OPERATION:

Divider circuit * 2 *

Divider circuit should be *2* instead of *1*



DEMONTAGE STRING-ENSEMBLE

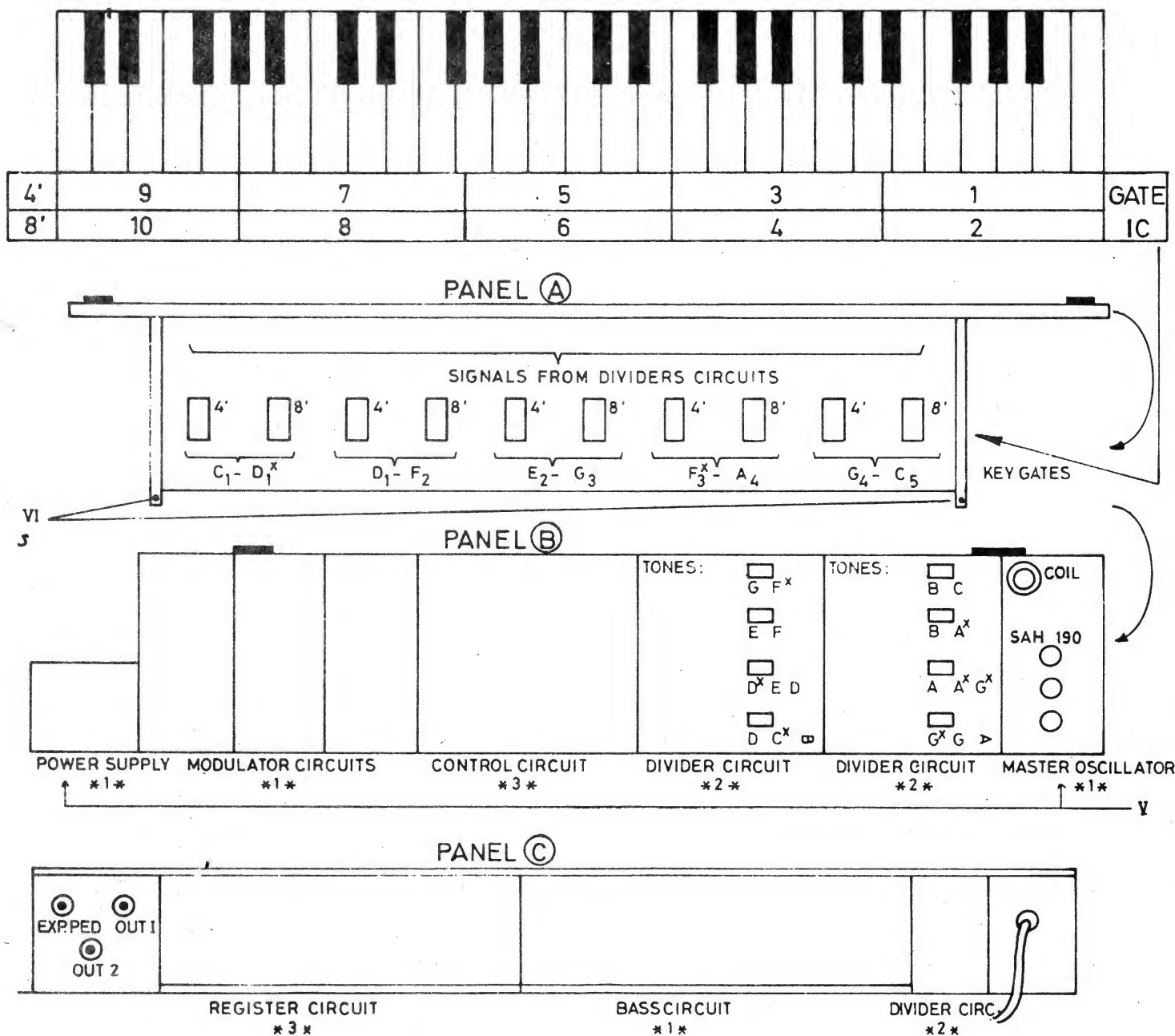
1. Verwijder schroeven I
2. Til bovenblad op, zie II
3. Schuif bovenblad weg, zie III
4. Verwijder schroeven IV
5. De konstruktie kan nu uit de kast worden getild.
6. De panelen A en B zijn klapbaar na verwijdering van schroeven VI en V

DISASSEMBLY OF STRING-ENSEMBLE

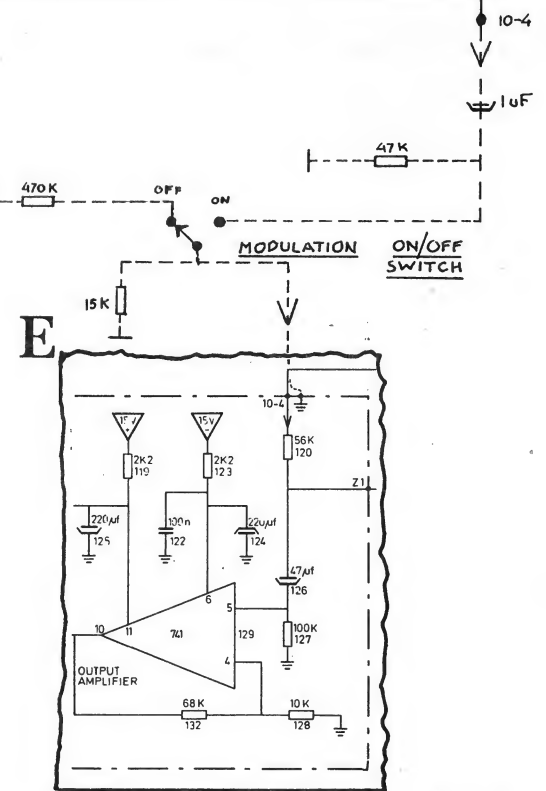
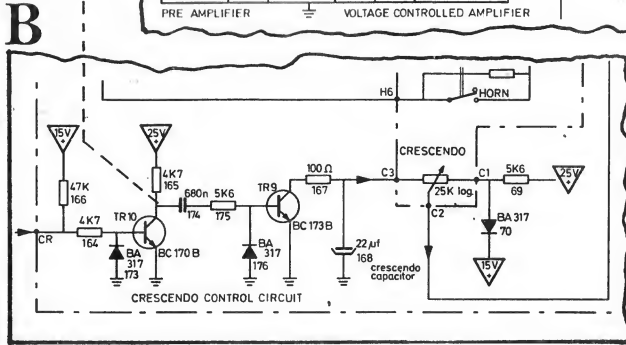
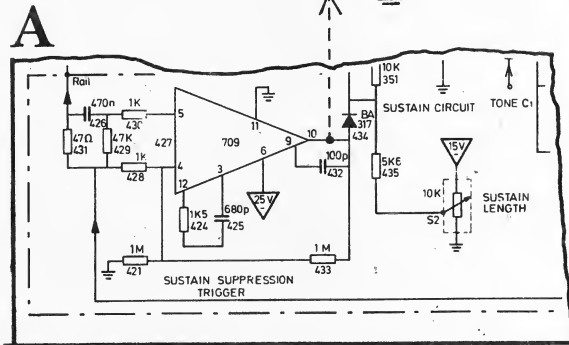
1. Remove (3) screws I
2. Raise cover, see II
3. Push cover out of the way, see III
4. Remove (4) screws IV
5. Lift out unit from cabinet
6. Panels A and B will fold out of way after removing screws V and VI

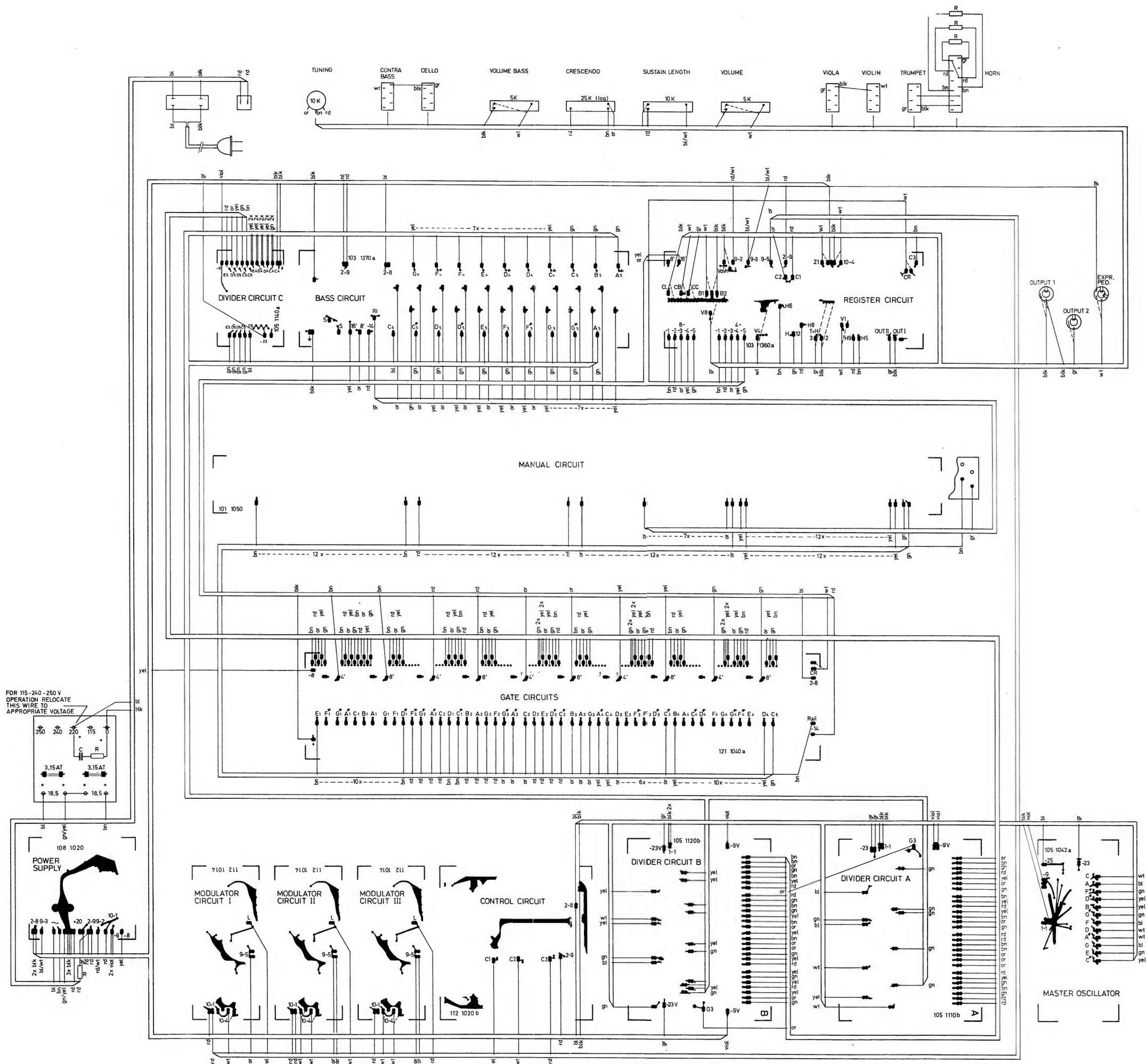
DEMONTAGE STRING-ENSEMBLE

1. Schrauben rausdrehen (siehe I)
2. Oberbrett anheben (siehe II)
3. Oberbrett wegschieben (siehe III)
4. Schrauben rausdrehen (siehe IV)
5. Die Konstruktion kann jetzt aus der Kiste gehoben werden.
6. Die Paneelen a und b sind klapbar, nachdem die Schrauben rausgedreht sind. (siehe V und VI).



From serie 31.



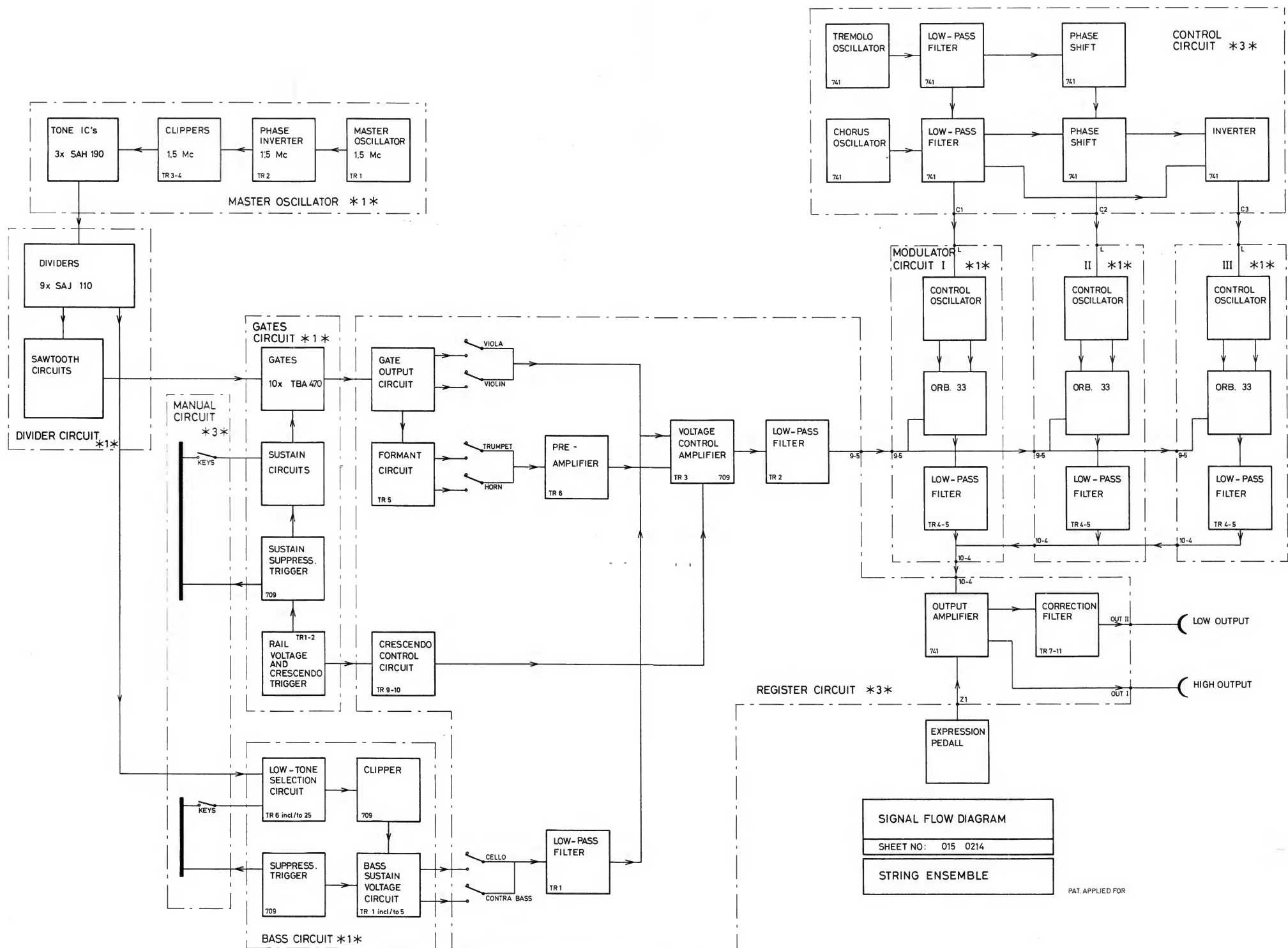


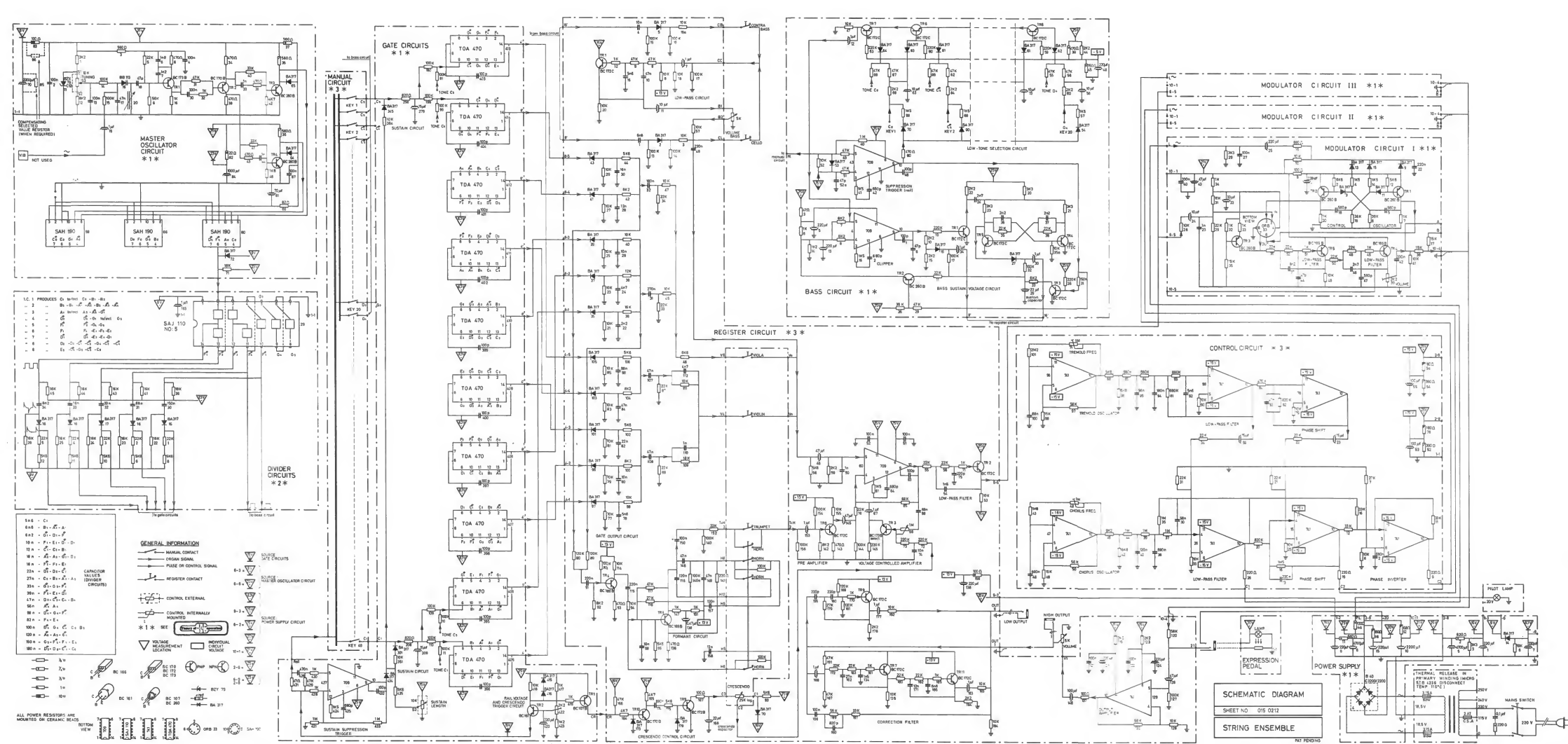
WIRING DIAGRAM

SHEET NO: 015 0213

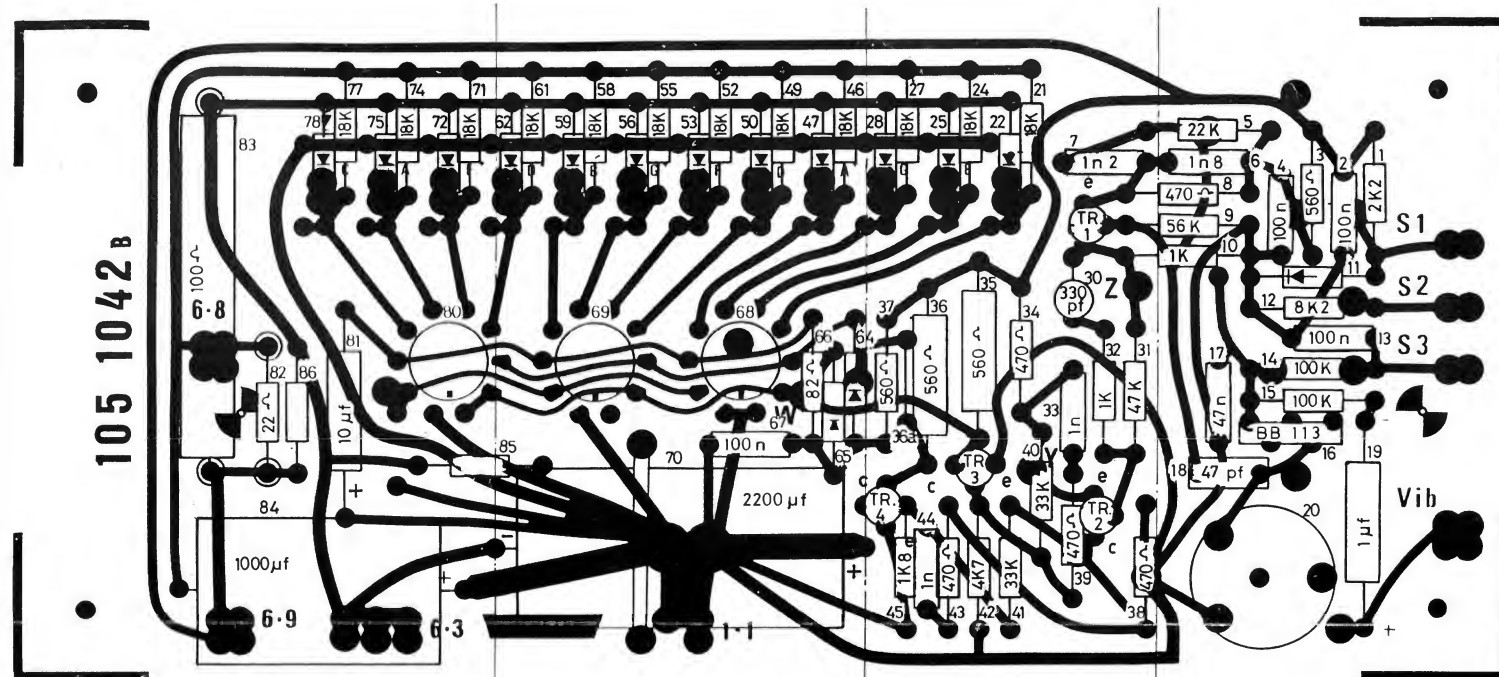
STRING ENSEMBLE

PAT. APPLIED FOR





210 - 3182	RESISTOR	45
210 - 3829	"	66
210 - 3471	"	8, 34, 38, 39, 43
210 - 3561	"	3
210 - 3102	"	10, 32
210 - 3222	"	1
210 - 3472	"	42
210 - 3822	"	12
210 - 3183	"	21, 24, 27, 46, 49, 52, 55, 58, 61, 71, 74, 77
210 - 3223	"	5
210 - 3333	"	40, 41
210 - 3473	"	31
210 - 3563	"	9
210 - 3104	"	14, 15
211 - 3229	"	82
211 - 3561	"	37
211 -	"	85, 86
212 - 3561	"	35, 36
216 - 3101	"	83
310 - 2122	CAPACITOR	7
310 - 2102	"	33, 34
310 - 2182	"	6
310 - 2104	"	2, 4, 13, 67
310 - 2473	"	17
313 - 2331	"	30
313 - 5479	"	18
314 - 6222	EL CAPACITOR	70
314 - 8108	"	19
314 - 8109	"	81
314 - 6102	"	84
411 - 1702	TRANSISTOR	TR. 2
411 - 1732	"	TR. 1
411 - 2602	"	TR. 3, 4
420 - 0317	DIODE	22, 25, 28, 47, 50, 53, 56, 59, 62, 64, 65, 72, 75, 78
424 - 0279	"	11
430 - 0113	"	16
436 - 0190	I. C.	68, 69, 80
600 - 3586	COIL	20
500 - 0907	JUMPER WIRE	36a
125 - 0161	TUBE	2
775 - 0002	CABLE TIE	1
900 - 0031	BEAD	4
105 - 1042 A	CIRCUIT BOARD	
PART. NO.	NAME	POSITION NO.



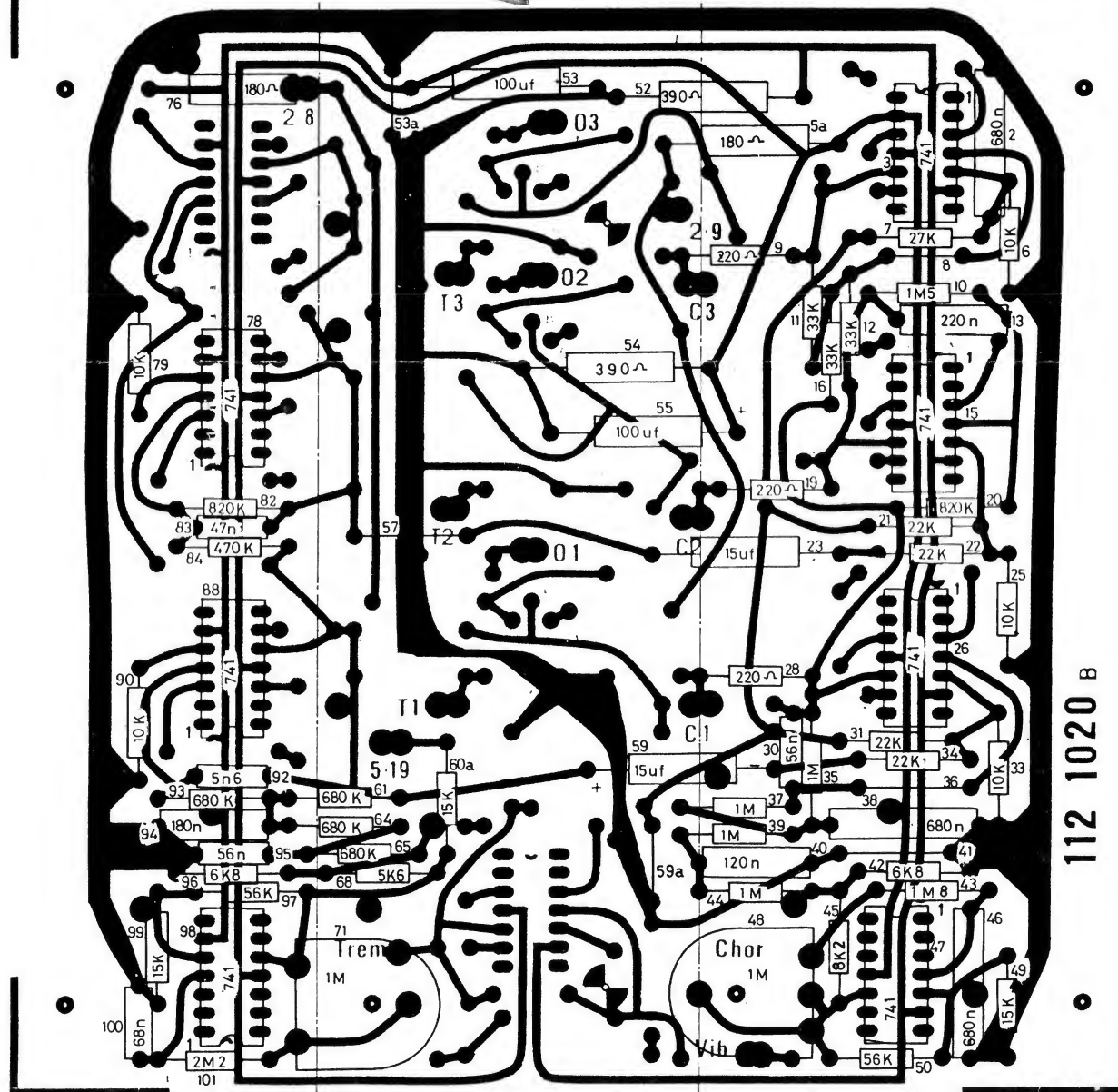
R & C	71 - 86	46 - 70	21 - 45	1 - 20
TRANSISTOR			TR. - 1, 2, 3, 4	

MASTER OSCILLATOR

PART. NO. 005 - 0071

900 - 0031	BEAD	4 x
210 - 3185	RESISTOR	43
210 - 3221	RESISTOR	9, 19, 28
210 - 3822	"	45
210 - 3562	"	68
210 - 3682	"	42, 96
210 - 3103	"	6, 25, 33, 79, 90
210 - 3153	"	49, 99, 60a
210 - 3223	"	21, 22, 31, 34
210 - 3273	"	7
210 - 3333	"	11, 12, 16
210 - 3563	"	50, 97
210 - 3474	"	84
210 - 3684	"	61, 64, 65, 93
210 - 3824	"	20, 82
210 - 3105	"	35, 37, 39, 44
210 - 3155	"	10
210 - 3225	"	101
212 - 3391	"	52, 54
213 - 3181	"	5a, 76
	CAPACITOR	
310 - 2562	"	92
310 - 2473	"	83
310 - 2563	"	30, 95
310 - 2683	"	100
310 - 2124	"	40
310 - 2184	"	94
310 - 2224	"	13
310 - 2684	"	2, 38, 46
314 - 8159	EL CAPACITOR	23, 59
314 - 7101	"	53, 55
230 - 0063	POT. METER	48, 71
436 - 0741	I. C.	3, 15, 26, 47, 78, 88, 98
500 - 0905	JUMPER WIRE	8, 36, 41, 57, 53a, 59a
112 - 1020 B	CIRCUIT BOARD	
PART. NO.	NAME	POSITION NO.

R & C	76 - 101	52 - 75	1 - 51
TRANSISTOR			



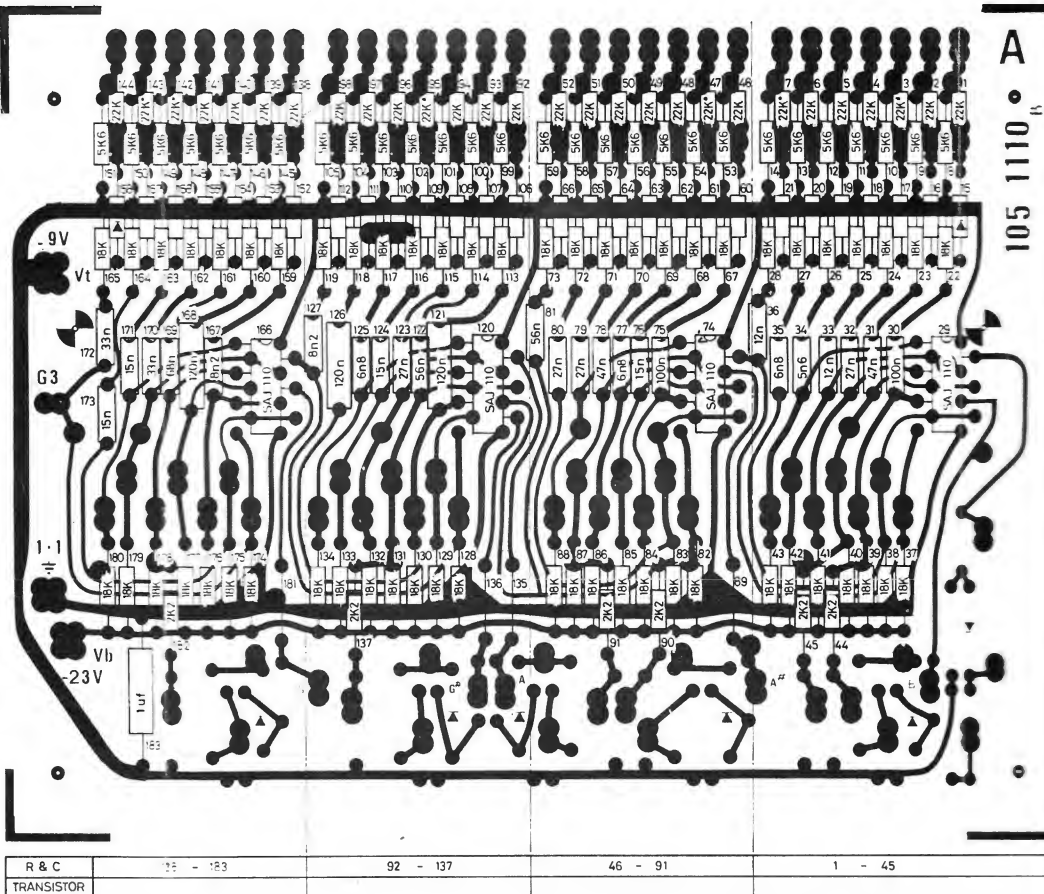
CONTROL CIRCUIT

PART. NO. 012 - 0025

210 - 3393	RESISTOR	6, 19
210 - 3223	"	29 36, 48, 50, 52
210 - 3153	"	17, 35, 38, 31
210 - 3103	"	10, 28, 41, 49
210 - 3102	"	7, 20, 32, 33, 34, 45, 51
210 - 3562	"	2, 12
210 - 3332	"	26
210 - 3681	"	16
210 - 3101	"	8
210 - 3152	"	4, 14
210 - 3183	"	31
310 - 2272	CAPACITOR	46
310 - 2822	"	37
310 - 2102	"	23
310 - 2104	"	27
310 - 2224	"	22
310 - 2334	"	40, 42
313 - 2479	"	44
313 - 2561	"	5, 18, 47
314 - 6221	EL CAPACITOR	25
314 - 7101	"	1
314 - 7479	"	43
314 - 7339	"	30
314 - 8109	"	24
411 - 1692	TRANSISTOR	TR. 4, 5
411 - 2602	"	TR. 1, 2, 3
420 - 0317	DIODE	3, 9, 11, 13, 15
230 - 0055	POT. METER	39
436 - 0033	I. C.	21
112 - 1014 A	CIRCUIT BOARD	
PART. NO.	NAME	POSITION NO.

R & C	38 - 52, 17	29 - 37	21 - 28	8 - 20	1 - 7
TRANSISTOR	TR. 4, 5	TR. 3		TR. 2	TR. 1

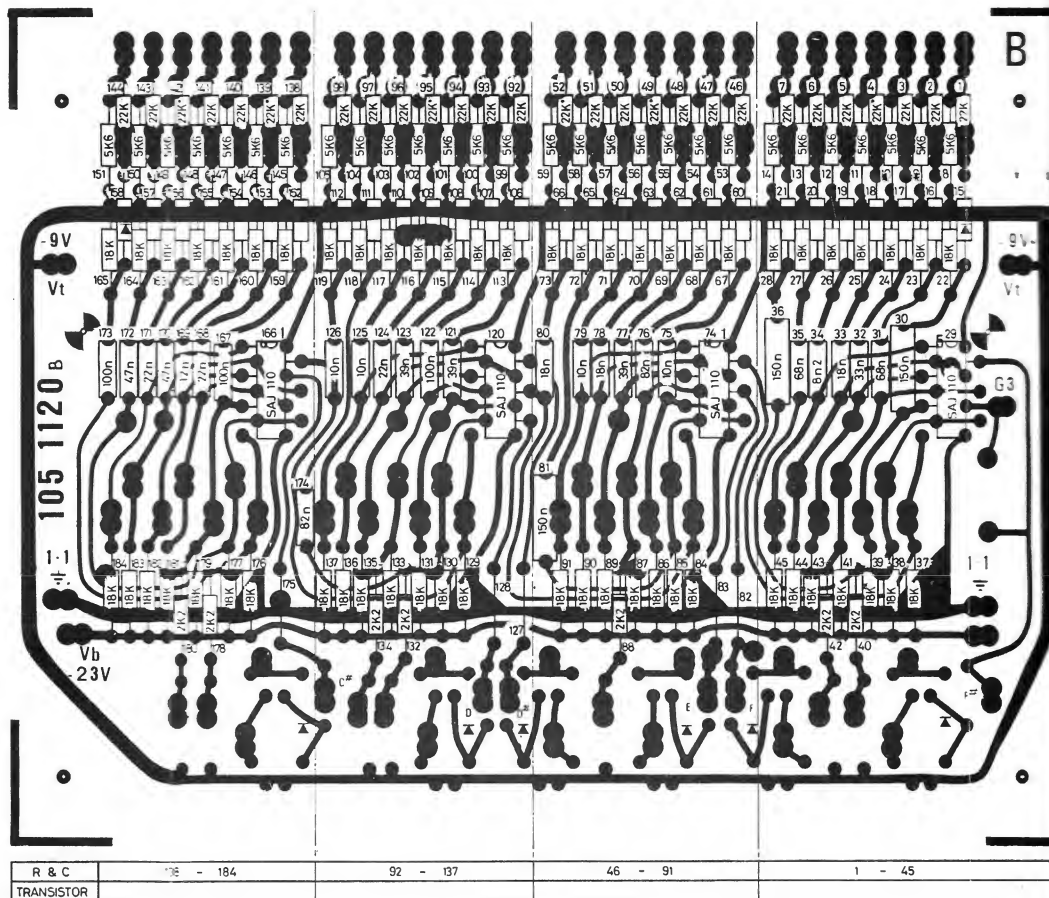
210 - 3222	RESISTOR	44, 45, 90, 91, 137, 182
210 - 3562	"	8, 9, 10, 11, 12, 13, 14, 53, 54, 55, 56, 57, 58, 59, 99, 100
210 - 3562	"	101, 102, 103, 104, 105, 145, 146, 147, 148, 149, 150, 151
210 - 3183	"	22, 23, 24, 25, 26, 27, 28, 37, 38, 39, 40, 41, 42, 43, 67
210 - 3183	"	68, 69, 70, 71, 72, 73, 82, 83, 84, 85, 86, 87, 88, 113
210 - 3183	"	114, 115, 116, 117, 118, 119, 128, 129, 130, 131, 132, 133, 134
210 - 3183	"	159, 160, 161, 162, 163, 164, 165, 176, 177, 178, 179, 180
210 - 3183	"	179, 180
210 - 3223	"	1, 2, 3, 4, 5, 6, 7, 46, 47, 48, 49, 50, 51, 52, 53, 93, 94, 95
210 - 3223	"	96, 97, 98, 138, 139, 140, 141, 142, 143, 144
310 - 2562	CAPACITOR	34
310 - 2682	"	35, 77, 125
310 - 2822	"	127, 167
310 - 2123	"	33, 36
310 - 2153	"	76, 124, 171, 173
310 - 2273	"	32, 79, 80, 123
310 - 2333	"	170, 172
310 - 2473	"	31, 78
310 - 2563	"	81, 122
310 - 2683	"	169
310 - 2104	"	30, 75
310 - 2124	"	121, 126, 168
314 - 8108	"	183
420 - 0317	DIODE	15, 16, 17, 18, 19, 20, 21, 60, 61, 62, 63, 64, 65, 66
420 - 0317	"	106, 107, 108, 109, 110, 111, 112, 152, 153, 154, 155, 156
420 - 0317	"	157, 158
436 - 0110	I.C.	29, 74, 120, 166
500 - 0905	JUMPER WIRE	89, 135, 136, 181
105 - 1110 B	CIRCUIT BOARD	
PART. NO.	NAME	POSITION NO.



DIVIDER CIRCUIT A

PART. NO. 005 - 0077

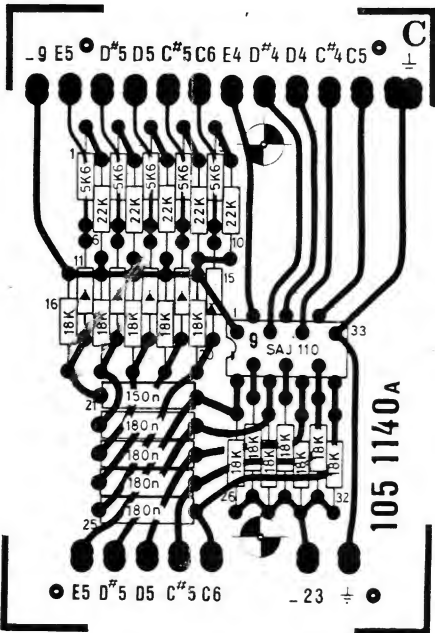
210 - 3562	RESISTOR	8, 9, 10, 11, 12, 13, 14, 53, 54, 55, 56, 57, 58, 59, 99, 100, 101
210 - 3562	"	102, 103, 104, 105, 145, 146, 147, 148, 149, 150, 151
210 - 3222	"	40, 42, 88, 132, 134, 178, 180
210 - 3183	"	22, 23, 24, 25, 26, 27, 28, 37, 38, 39, 40, 41, 42, 43, 67
210 - 3183	"	68, 69, 70, 71, 72, 73, 84, 85, 86, 87, 88, 90, 91, 113, 114
210 - 3183	"	115, 116, 117, 118, 119, 129, 130, 131, 133, 135, 136, 137
210 - 3183	"	159, 160, 161, 162, 163, 164, 165, 176, 177, 178, 181
210 - 3183	"	182, 183, 184
210 - 3223	"	1, 2, 3, 4, 5, 6, 7, 46, 47, 48, 49, 50, 51, 52, 53, 93, 94, 95
210 - 3223	"	96, 97, 98, 138, 139, 140, 141, 142, 143, 144
310 - 2822	CAPACITOR	34
310 - 2103	"	75, 79, 125, 126
310 - 2123	"	169
310 - 2183	"	33, 78, 80
310 - 2223	"	124, 168, 171
310 - 2333	"	32
310 - 2393	"	77, 121, 123
310 - 2473	"	170, 172
310 - 2683	"	31, 35
310 - 2823	"	76, 174
310 - 2104	"	122, 167, 173
310 - 2154	"	30, 36, 81
420 - 0317	DIODE	15, 16, 17, 18, 19, 20, 21, 60, 61, 62, 63, 64, 65, 66, 106
420 - 0317	"	107, 108, 109, 110, 111, 112, 152, 153, 154, 155
420 - 0317	"	156, 157, 158
436 - 0110	I.C.	29, 74, 120, 166
500 - 0905	JUMPER WIRE	82, 83, 127, 128, 175
105 - 1120 B	CIRCUIT BOARD	
PART. NO.	NAME	POSITION NO.



DIVIDER CIRCUIT B

PART. NO. 005 - 0078

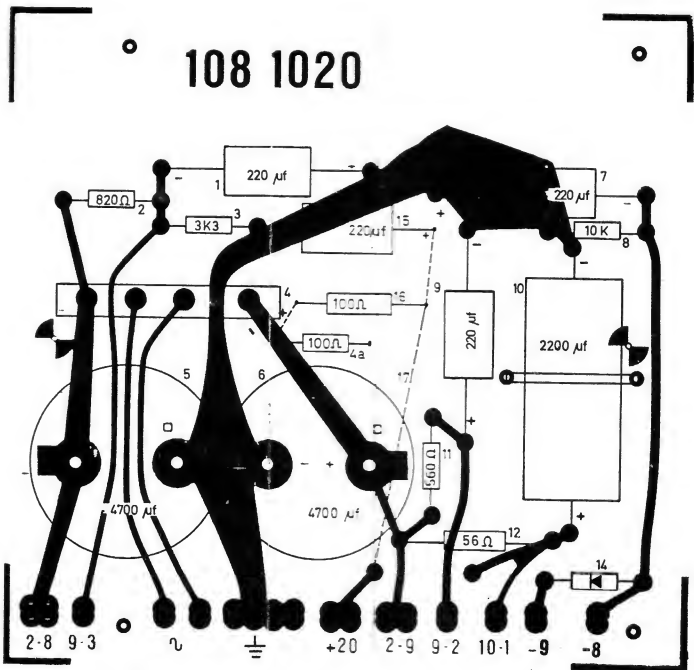
420 0180	DIODE	11...15
210 3562	RESISTOR	1...5
210 3183	"	16...20, 26...32
210 3223	"	6...10
310 2154	CAPACITOR	21
310 2184	"	22...25
436 0110	I.C.	33
105 1140	CIRC.BOARD	
PART NO.	NAME	POSITION NO



DIVIDER CIRCUIT C

PART NO. 005 0082

125.0116	JUMPER WIRE	17
900.0031	BEAD	2x
213 3101	RESISTOR	16
211 3101	"	4a
211 3561	"	11
211 3821	"	2
211 3332	"	3
211 3103	"	8
213 3569	"	12
314 6221	EL. CAPACITOR	1, 7, 9, 15
314 6222	"	10
315 6472	"	5, 6
420 0317	DIODE	14
430 2206	RECTIFIER	4
CODE NO:	NAME	POSITION NO.



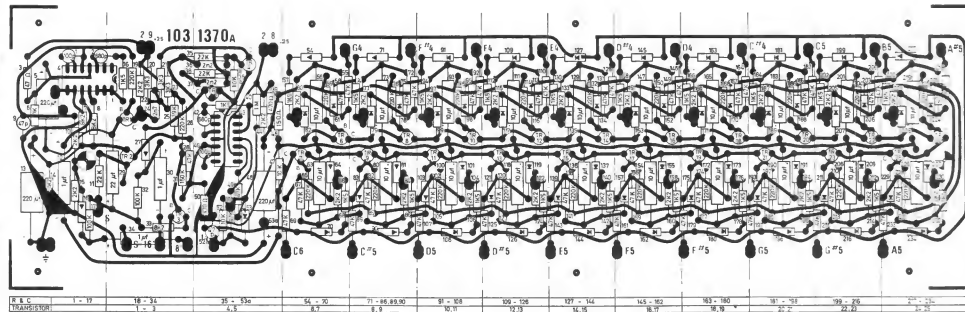
R & C	1 - 6	7 - 17
TRANSISTOR		

POWER SUPPLY

PART NO. 008 0066

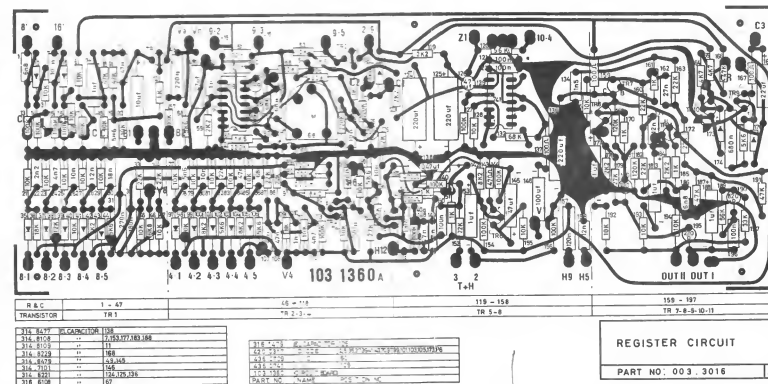
[illegible]

PART NO 02' 00



PART NO. 003 3015

212	31.73	0.44	5	30	132.87
213	31.73	0.44	5	30	132.87
214	31.73	0.44	5	30	132.87
215	31.73	0.44	5	30	132.87
216	31.73	0.44	5	30	132.87
217	31.73	0.44	5	30	132.87
218	31.73	0.44	5	30	132.87
219	31.73	0.44	5	30	132.87
220	31.73	0.44	5	30	132.87
221	31.73	0.44	5	30	132.87
222	31.73	0.44	5	30	132.87
223	31.73	0.44	5	30	132.87
224	31.73	0.44	5	30	132.87
225	31.73	0.44	5	30	132.87
226	31.73	0.44	5	30	132.87
227	31.73	0.44	5	30	132.87
228	31.73	0.44	5	30	132.87
229	31.73	0.44	5	30	132.87
230	31.73	0.44	5	30	132.87
231	31.73	0.44	5	30	132.87
232	31.73	0.44	5	30	132.87
233	31.73	0.44	5	30	132.87
234	31.73	0.44	5	30	132.87
235	31.73	0.44	5	30	132.87
236	31.73	0.44	5	30	132.87
237	31.73	0.44	5	30	132.87
238	31.73	0.44	5	30	132.87
239	31.73	0.44	5	30	132.87
240	31.73	0.44	5	30	132.87
241	31.73	0.44	5	30	132.87
242	31.73	0.44	5	30	132.87
243	31.73	0.44	5	30	132.87
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246	31.73	0.44	5	30	132.87
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250	31.73	0.44	5	30	132.87
251	31.73	0.44	5	30	132.87
252	31.73	0.44	5	30	132.87
253	31.73	0.44	5	30	132.87
254	31.73	0.44	5	30	132.87
255	31.73	0.44	5	30	132.87
256	31.73	0.44	5	30	132.87
257	31.73	0.44	5	30	132.87
258	31.73	0.44	5	30	132.87
259	31.73	0.44	5	30	132.87
260	31.73	0.44	5	30	132.87
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262	31.73	0.44	5	30	132.87
263	31.73	0.44	5	30	132.87
264	31.73	0.44	5	30	132.87
265	31.73	0.44	5	30	132.87
266	31.73	0.44	5	30	132.87
267	31.73	0.44	5	30	132.87
268	31.73	0.44	5	30	132.87
269	31.73	0.44	5	30	132.87
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271	31.73	0.44	5	30	132.87
272	31.73	0.44	5	30	132.87
273	31.73	0.44	5	30	132.87
274	31.73	0.44	5	30	132.87
275	31.73	0.44	5	30	132.87
276	31.73	0.44	5	30	132.87
277	31.73	0.44	5	30	132.87
278	31.73	0.44	5	30	132.87
279	31.73	0.44	5	30	132.87
280	31.73	0.44	5	30	132.87
281	31.73	0.44	5	30	132.87
282	31.73	0.44	5	30	132.87
283	31.73	0.44	5	30	132.87
284	31.73	0.44	5	30	132.87



PART NO: 003-3016